

A² concluded

from the polishing pad flexing or conforming to the surface being polished. If the surface being polished is initially bowed or arcuate (i.e., is not planar), the polishing pad will take on the shape of the non-planar regions causing further dishing of the surface being polished. The CMP slurry initiates the polishing process by chemically reacting with the surface material in both elevated and recessed areas. Because of the deformation of the CMP pad, the reacted surface material in recessed areas may be physically stripped in addition to the reacted surface material in elevated areas. As such, a surface having fluctuations in elevation may continue to have some elevational disparity even after it has been subjected to CMP. The dishing effect is particularly a problem when forming a relatively wide interconnect between regions of a dielectric that is substantially more dense than the metal. While the dielectric is hard enough to support the overlying regions of the CMP pad, the metal is not, and thus allows significant flexing of the pad. Such flexing of the CMP pad causes the surface of the metal interconnect to become recessed relative to adjacent regions of the dielectric.

Please replace the paragraph on pg. 5, line 19 - pg. 6, line 4 with the following:

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It would therefore be desirable to develop a polishing process which can achieve global planarization across the entire topological surface of an interconnect level. Global planarization requires that the polish rate be uniform in all elevated areas of the topography. Such uniformity of the polish rate is particularly needed when polishing a topography having a set of interconnect which is of relatively narrow lateral dimension spaced from a relatively wide interconnect. Herein, narrow and wide refer to a lateral dimension which extends along the trench base perpendicular and co-planar with the elongated axis of the interconnect. That is, the dielectric in the space between the series of narrow interconnect and the wide interconnect needs to be polished as quickly as the interconnect are polished in order to assure both densely spaced narrow interconnects and sparsely spaced wide interconnects have a flat and relatively co-planar upper surface. The desirous polishing process must avoid problems typically arising during CMP, for example, metal dishing or oxide erosion.
